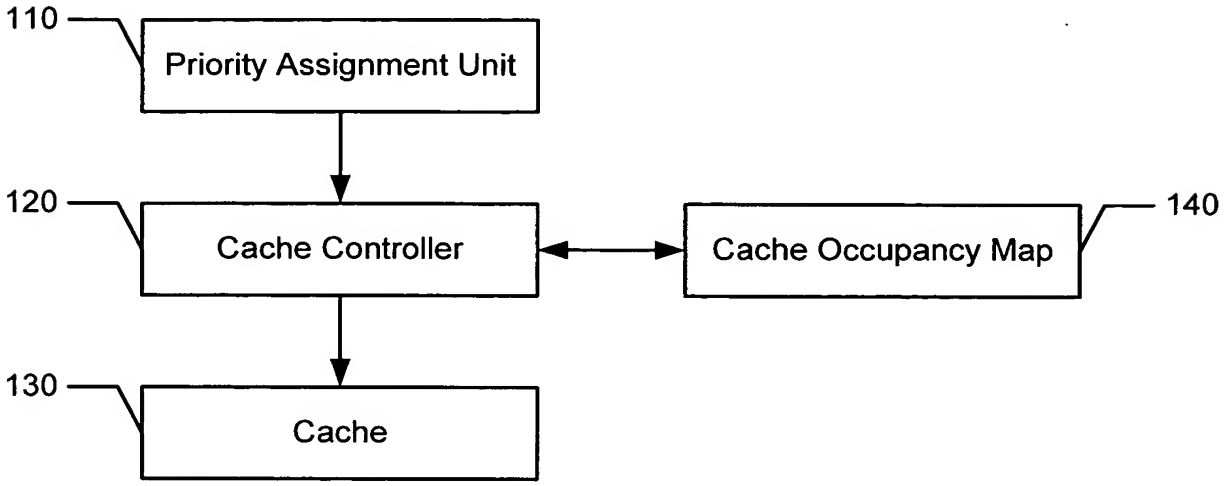
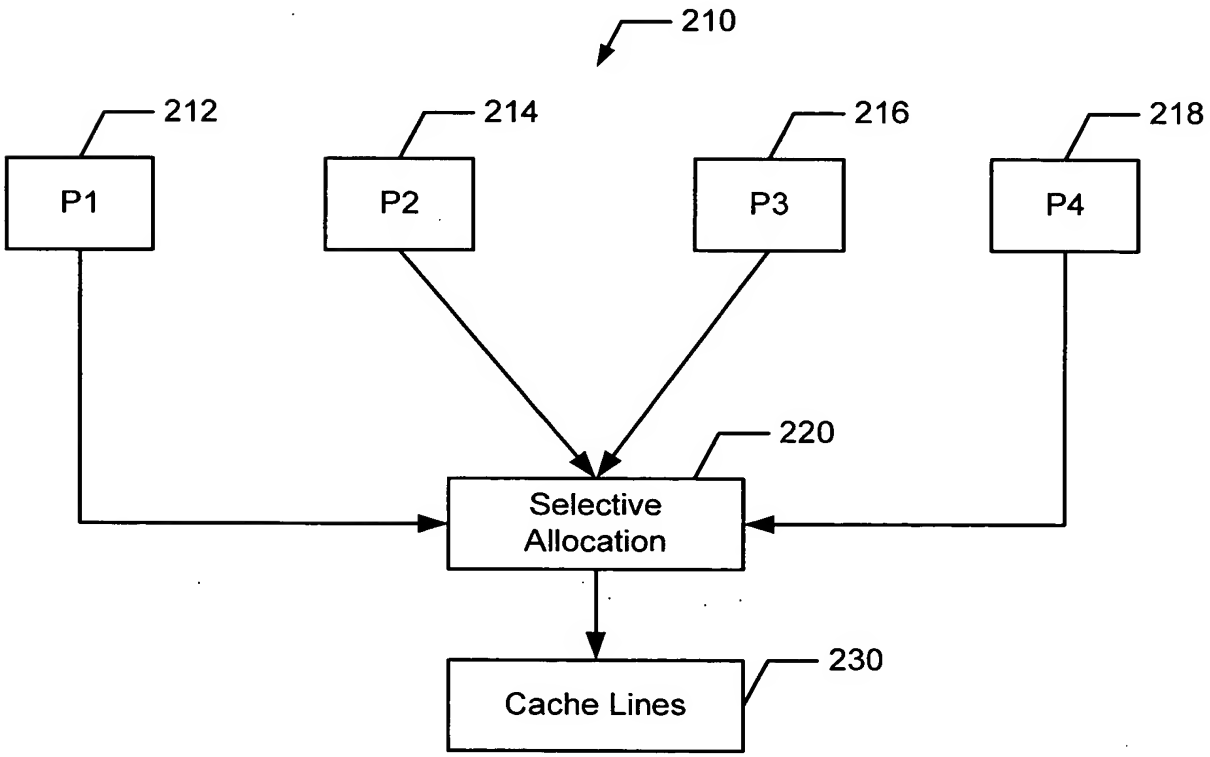



100

FIG. 1




200

FIG. 2

| Stream Type | Priority Level (P) | Allocation Probability (AP) |
|---|---|---|
| Primary Host Applications | 1 | 100% |
| Secondary Host Applications | 2 | 75% |
| Peripheral Applications | 3 | 50% |
| Other Applications | 4 | 25% |

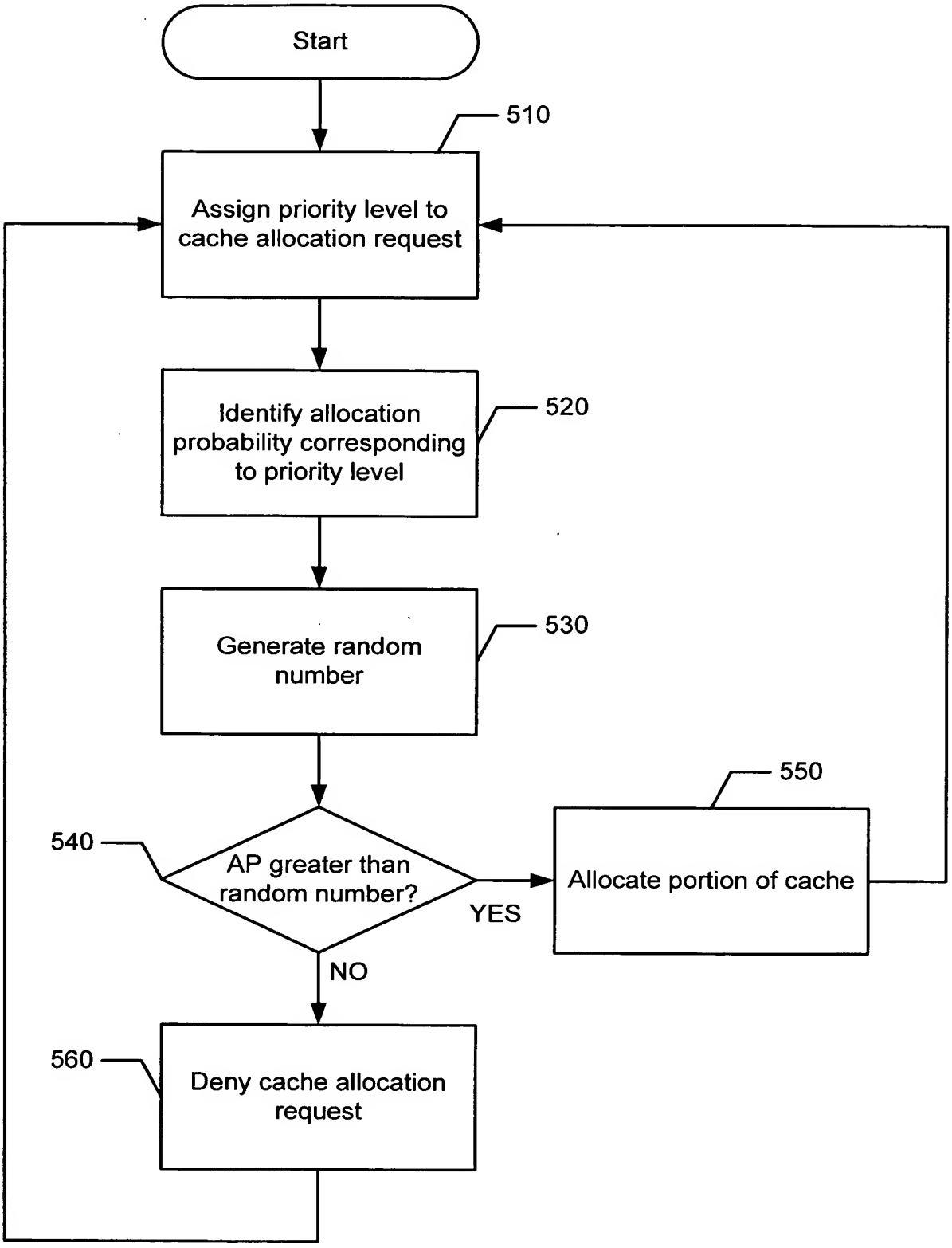
300

FIG. 3

| Stream Type | Priority Level (P) | Time Interval (T) | Allocation Probability (AP) |
|---|---|---|---|
| Primary Host Applications | 1 | 1 | 100% |
| | | 2 | 50% |
| | | 3 | 33% |
| | | 4 | 25% |
| Secondary Host Applications | 2 | 1 | 50% |
| | | 2 | 25% |
| | | 3 | 17% |
| | | 1 | 13% |
| Peripheral Applications | 3 | 1 | 33% |
| | | 2 | 17% |
| | | 3 | 11% |
| | | 4 | 8% |
| Other Applications | 4 | 1 | 25% |
| | | 2 | 13% |
| | | 3 | 8% |
| | | 4 | 6% |

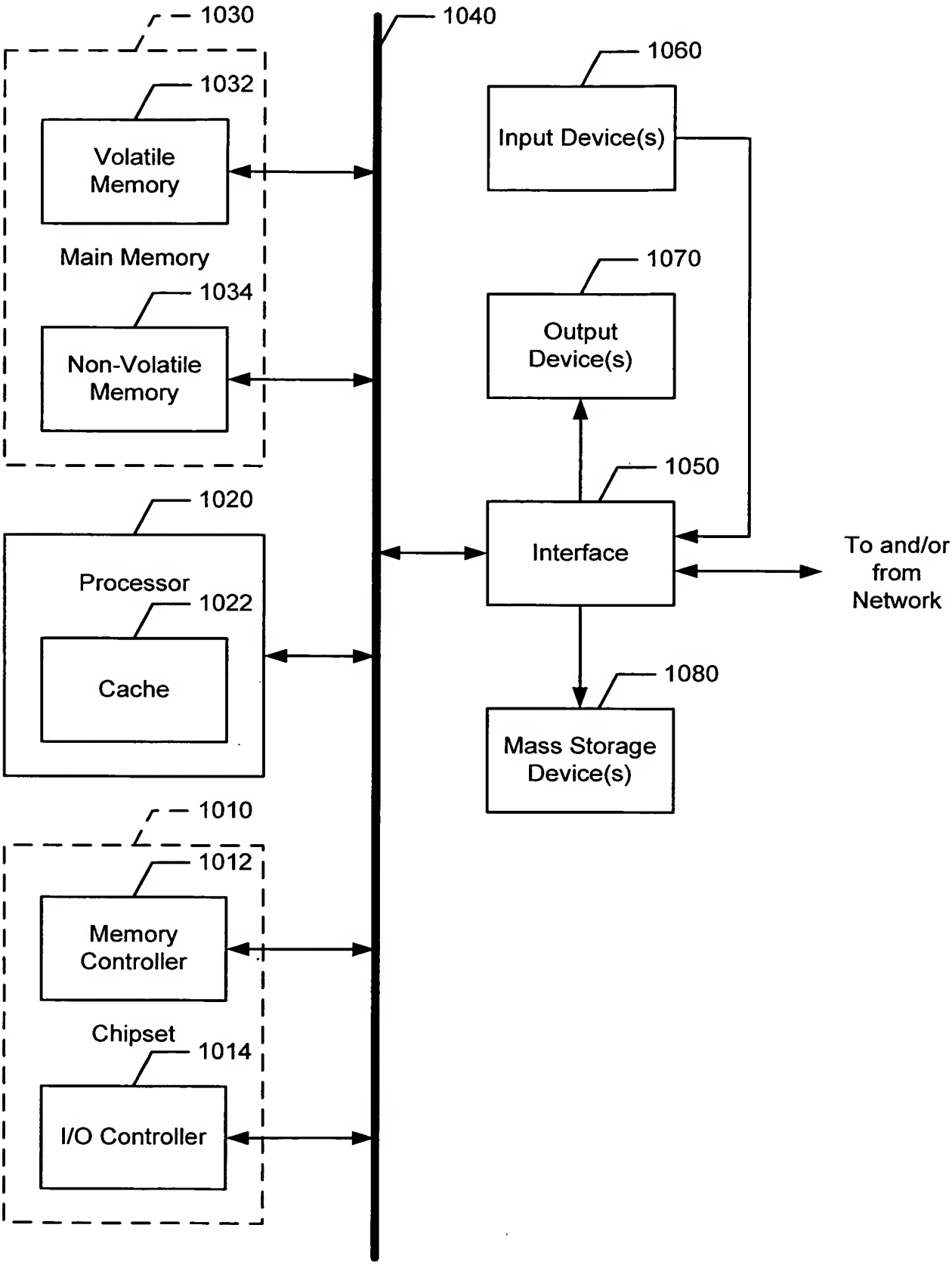
400

FIG. 4


Start
510
Assign priority level to cache allocation request
Identify allocation probability corresponding to priority level
520
Generate random number
530
550
540
AP greater than random number?
YES
Allocate portion of cache
NO
560
Deny cache allocation request

500

FIG. 5


1030
1040
1060
1032
Volatile Memory
Input Device(s)
Main Memory
1070
1034
Output Device(s)
Non-Volatile Memory
1050
1020
Interface
To and/or from Network
Processor
1022
Cache
1080
Mass Storage Device(s)
1010
1012
Memory Controller
Chipset
1014
I/O Controller

1000

FIG. 6